Virginia Wildlife

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Virginia Wildlife

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COVER: Norfolk architect E. Lynn Forehand is this month's cover artist. Wood ducks are featured on the cover; other examples of his "hobby handwork" are on pages 14 and 15.

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EDITORIAL

Giant Steps

NOW is the time for all good sportsmen to come to the aid of the state's wildlife resource by urging their state legislators to vote for the bills to revise Virginia's game and fish laws which have just been drafted and recommended for passage by the Virginia Advisory Legislative Council's special study committee headed by Delegate Arthur H. Richardson.

Delegate Richardson, who represents Dinwiddie County and the City of Petersburg, and his entire committee—State Senator D. W. Bird, of Bland; John B. Boatwright, of Buckingham; Paul Crockett, of Yorktown; Charles Hamilton, managing editor of the Richmond *News Leader;* W. H. Irvine, of Richmond; Delegate Baldwin G. Locher, of Lexington; Webb Midyette, chief of the Game Commission's law enforcement division; R. F. Burke Steele, of Petersburg; and Alexander Long Wilson, of Arlington—deserve our sincere thanks for their dedicated efforts to unsnarl Virginia's confusing game and fish laws. They also deserve our vocal support of the bills which they are recommending to the General Assembly to insure the passage of this sorely needed legislation, so that their efforts will not have been in vain. As the 1960 General Assembly's "House Joint Resolution No. 43" says, "there has been no general revision of the laws of Virginia relating to game, inland fisheries, and dogs for many years, during which period of time conditions affecting the sports of hunting and fishing and affecting wildlife conservation have materially changed in this state." This resolution, which directs the VALC to make a study of these laws, also notes that "there are some ambiguities in the present law and some overlapping and duplications therein"—a masterpiece of understatement.

The committe's recommendations follow months of study, a series of public hearings, and conferences with Game Commission personnel. Major proposals include these:

- Adoption of uniform seasons and bag limits, primarily by the voluntary rescinding of local acts to enable the Game Commission to set statewide regulations.
- A provision permitting property owners to institute civil proceedings to recover damages of $50 from those who trespass upon their property.
- A prohibition against carrying a loaded firearm of any caliber upon the highway or near it.
- A provision for issuance of a search warrant permitting wardens to search property for "game and fish illegally taken."
- Adoption of a two-part law designed to permit better enforcement of the law against spotlight hunting of deer and elk.

Also suggested by the committee are measures which would simplify procedures involved in obtaining county big game damage stamps, encourage the counties to take over the administration of the dog laws to free game wardens for wildlife protection, clarify various legal definitions, and increase the minimum fines for various offenses.

The committee pointed out that two agencies—the Game Commission and the General Assembly—have had a hand in laws and regulations which cover hunting and fishing, and recommended that the General Assembly "pass broad enabling legislation, retaining general control, with the Game Commission delegated to outlining seasons and bag limits."

This we buy, 100 percent. We hopc you do, too, and that you'll let your state legislators know how you feel. It'll be up to them to take the bull by the horns and move to rescind those local "squirrel bills." Here's hoping that, one after another, they "take one giant step" toward statewide uniformity of our hunting and fishing laws.—M. R. C.

LETTERS

More On Small Game Season

HAVING lived in a state where the small game season was open prior to the big game season I found this to be an ideal setup. That way the hunter can hunt small game several weeks before the big game season opens so he will not be discriminated against in any way. It would mean fewer squirrel and grouse hunters in the mountains during the deer season and hence lessen chances for accidents. Also, it will make the deer hunters happier since they will be able to hunt deer knowing that most of the hunters will be doing the same thing. There is nothing more disquieting than to be on a stand and have a grouse hunter come barrelling by making a lot of noise. (I like grouse hunting, but not during the one week of deer season.)

If the small game season were opened a few weeks before the big game season, a lot of the pressure would be off the areas where deer are hunted. Of course, if the commission felt that opening the small game season early would prolong it they could move up the closing date in January. There are many fine hunting days early in November that could be used for small game hunting.

I have talked to several hunters in this section and most of them feel that any action similar to that stated above would be an improvement in the hunting laws. One other "gripe" they mentioned was the hodge-podge of county hunting seasons a person had to check on before starting out to hunt.

I have lived in Virginia for 14 years now and consider it one of the finest states for sportsmen in any field.

Robert R. Knox
Sullins College
Bristol, Virginia

MY sport is hunting squirrels with a rifle and dog.

The bow hunters have their chance at deer while the woods are still quiet. After the hordes of deer hunters and dogs hit the woods, it's very nearly impossible to find a place where dogs aren't baying a deer or running a cold trail. Either way you've had it as far as an early morning or late evening hunt is concerned, whether they have gone through or are coming through.

If the squirrel season were to come in November 15 and deer season the 30th, both groups would have better luck.

Rabbit hunters ordinarily don't hunt places squirrels use, so there would be little conflict there. We could get our hunting done before snow and ice keep us out of the woods. Actually the best season for deer and ducks would be from January 1 through February 15.

Bernard L. Crew
Richmond, Virginia

I AM in complete agreement with the views expressed in your editorial about an early small game season in the October issue of VIRGINIA WILDLIFE.

Fred Balme, Jr.
Hampton, Virginia

(Continued on page 27)

Commission Photo by Kesteloo

The deer hunter naturally wants and expects a large deer herd, but what about the farmer whose crops are often destroyed?

" Between the Devil and the Deep Blue Sea "

By C. H. SHAFFER
Supervising Game Biologist
Lynchburg, Virginia

DO you have problems? Do you find yourself rolling and tossing at night, unable to sleep? Do you often feel that the deck is stacked against you and that whatever move you make, you can't win? We don't have the cure-all, but if it's any comfort to you—you have company, and we sympathize.

Contrariwise, consider for a while the complicated problems confronting the wildlife manager. It is his primary job to produce a supply of wildlife year after year for recreational use. Simple, you say, until you consider the many varieties of wildlife in Virginia not under controlled conditions in pens or pastures, but roaming at will within our 98 counties. Think about such things as food, cover, predation, disease, poaching, weather, crippling losses, farming practices, superhighways, and expanding human populations in relation to how they affect each of our wildlife species. Consider the fact that much of the wildlife that many of us desire lives on privately owned land over which we have little or no control. It should be obvious and understood, too, that not all Virginians are as interested in conserving wildlife or in producing large populations of game as are hunters and game managers.

Despite numerous limiting factors, Virginia has always been blessed with a wide variety of wildlife species: forest game, farm game, migratory game, and furbearers. Through the years some populations have flourished, some have remained the same, some have fluctuated, while other species admittedly may have decreased.

For instance, during the 1960-61 hunting season, Old Dominion hunters recorded the highest deer kill in Virginia's history—over 36,000 were checked. The largest turkey kill on record in the state was also attained, and quail hunters claimed that they had the best population of birds in the last 20 years. Unfortunately, rabbit and waterfowl populations were down in some areas. Guess what we heard about most during the last year? The large wildlife populations were apparently taken for granted, while the Game Commission was often blamed for the local shortages of other species. Do you see what we mean about not being able to win?

Perhaps the most paradoxical, perplexing, yet least understood of all our problems are those that result from *wildlife overpopulations.* The mere thought of ever having too much game must be a revolting revelation to most sportsmen. By now you must suspect that the writer has "stripped his gears," but bear with us.

In recent years, as certain wildlife populations have thrived, Virginia's field force of game wardens and game biologists have been spending more and more time attempting to solve the problems brought about by having too much game in certain areas. Some people want wildlife in ever-increasing numbers, while other citizens who are directly affected do not agree. The Game Commission is constantly in the middle.

One of the species that now make us cringe when mentioned is that valuable furbearer—the king of the engineers—the beaver. Fifteen years ago there were relatively few beavers in Virginia; they were completely protected by law, and their pelts, being scarce, were very valuable. Everyone seemed to be interested in conserving this interesting mammal. The Game Commission started managing the species by

"Come get *your beaver* out of my lowgrounds," game biologists are told.

stocking (through purchase and transferring live-trapped individuals) and protection. The results were astounding—the beaver responded to the management effort until today in many areas we are literally and figuratively "up to our necks" in beaver colonies.

Unfortunately, the beavers would not stay where stocked; invariably they moved into places where their presence was not desired. On occasions they flood lowgrounds, cause crop damage, clutter up farm ponds and often make highways impassable by their flooded dams. They are most tenacious and persistent. Many Virginians have found that a dam

destroyed one day will be completely rebuilt overnight. Considering the increased populations, the Game Commission legalized a trapping season. You might guess what happened—the bottom dropped out of the market on beaver pelts, and few people will now bother to trap them. In the meantime, the threatening 'phone calls and letters continue from many sections of the state. "Come get *your beaver* out of my lowgrounds." You think you have trouble!

A somewhat similar situation has developed with raccoons in many sections of the Old Dominion. Years ago raccoon hunting and trapping was an enjoyable, profitable recreation in many sections of Piedmont and eastern Virginia. In western Virginia raccoon hunting remains a popular sport, but paradoxically 'coons have never been too plentiful in this region.

When the price on 'coon hides dropped out of sight, many trappers and hunters seemed to lose some of their incentive for night hunting the wily raccoon. With the lack of harvest, raccoon numbers increased remarkably in many areas and the inevitable happened. Their nightly forays into cornfields and hen houses became commonplace. In the marshes they were found to be a serious competitor with the more valuable muskrat. In recent years the Game Commission has greatly liberalized the raccoon hunting season and removed bag limits in areas where they are most numerous. Intensive efforts to live-trap and transfer 'coons from east to west of the Blue Ridge generally have not been too successful. What we undoubtedly need in many areas is a new generation of hardy 'coon hunters and 'coon hounds. If you want to help the situation convince your wife that she should substitute raccoon for mink and thus help to revive the 'coonskin coat fad.

Without a doubt most of our problems are the result of Virginia's greatly expanding deer herd—the largest, by the way, of any state in the entire Southeast. The deer population, which has been estimated at over 250,000 animals, can be found in all Old Dominion counties in varying numbers.

At present, deer hunting is the most popular form of hunter participation. It is obvious that this great number of deer, feeding every night of the year, will consume a vast amount of food. Here's where the complications arise; unfortunately, deer will not confine themselves to feeding in the mountains, forests or swamps. Too often they prefer soybeans, ladino clover, small grain, peanuts, corn, fruit trees, and garden vegetables. Here again the game manager is in the middle of a controversy. The deer hunter naturally wants and expects a large deer herd, but what about the farmer whose crops are often destroyed?

Game biologists and wardens have tested numerous repellents, but nothing reliable has yet been devised. The only known relief for the landowner is usually a liberal deer season and bag limit which would keep the deer under control and help to alleviate losses to farmers' cash crops. However, in many counties deer hunters actively object to doe seasons, even though local farmers might be literally "losing their shirts." A game warden will give a landowner a permit to destroy deer or any other animals that are causing damage, but what happens when there are 25 to 75 deer eating a crop in one field, as sometimes occurs in Virginia?

Too many deer inevitably brings an additional set of problems—over-browsed native food, loss of weight, inferior antler development, disease, and at times, starvation. In a good fox hunting territory it doesn't take many deer to constitute an overpopulation—just one deer is too many!

Virginia's bear hunters usually have a good population of bruins in the mountains and in the Dismal Swamp. So long as the bears remain in their native habitat and feed on natural food there are few problems with these big fellows. However, in many quarters he is always viewed as a dangerous predator which must be destroyed. In recent years bears on occasions have been drifting from the mountains; any dead lamb, goat, calf, or upset bee-hive will be the automatic signal for an inevitable posse in search of a bear.

There are only two relatively small elk herds in Virginia. By no stretch of the imagination could they be called overpopulated, just misplaced. Thousands of people each year travel the Blue Ridge Parkway to the Peaks of Otter, hoping to view the magnificent elk which range near there. It is a thrilling sight to observe these huge animals in Virginia's mountains; however, you can rest assured that the orchard owners and farmers do not share the same enthusiasm after viewing elk damage to their orchards and cornfields. To alleviate the situation an open season on bull elk was set for several years, but the elk wisely remained on the Parkway property where they could not be hunted.

Coming down to small game species, the same principles and problems apply. Squirrel hunters would like to see the trees full of bushy-tails, while others feel that the only good squirrel can be found in a stew. Game Commission field workers are constantly receiving complaints of squirrel damage to corn crops. Suburban dwellers are all familiar with their activities in gardens, flower beds and under the eaves of homes. Many squirrel problems unquestionably could be solved with a more adequate harvest, but this has been impossible due to widespread controversies on early squirrel seasons.

The popular cottontail rabbit is another case in point; one young rabbit in a small garden is enough cause to bring the wrath of the gardener against the Game Commission. At the same time, bunny hunter rightly expects to find game to keep his beagles busy. The rabbit is a good example of another characteristic of wildlife populations that makes it so difficult to keep in balance with everyone's wishes. For numerous reasons cottontail populations might be extremely high one year and the next they will be difficult to locate. The same variations are often found in the same season in different localities.

When returning from a trip this summer to investigate a shortage of rabbits in eastern Virginia, the writer counted 13 cottontails in his yard and garden.

While the author was investigating a rabbit shortage in eastern Virginia, rabbits were destroying his garden.

We could continue and discuss other inter-related problems that game managers are called upon to solve—such items as groundhogs in the alfalfa, muskrats in a fish pond, bats in the belfry, or skunks under the front porch. All are time-consuming and perplexing, but we won't bore you further with the details. By now you should have discovered that there definitely can be too much wildlife under many conditions. You can probably better understand now why we of the Commission never count sheep while suffering from insomnia; we are too busy tabulating problem deer, raccoons, beavers, bears, bunnies and all the rest!

The stone "quarters house" (above) is part of the old Sully Plantation.

The John W. Brookfield Park provides playground and picnic areas.

The site of Burke Lake (below), just built by the Game Commission, was provided through Park Authority coordination.

Fort Belvoir Reservoir is now administered by the Park Authority.

Setting a Good Example - -

The Fairfax County Park Authority

By FRED M. PACKARD
Director of Parks, Fairfax County Park Authority

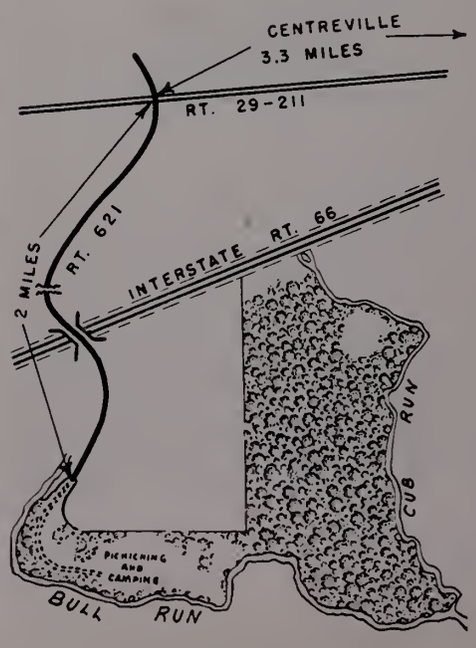
Commission Photos by Kesteloo

UNTIL 1950, Fairfax was essentially a rural county, but the rapid transition that has occurred since then to a community of subdivisions, shopping centers and proliferating highways threatens to create a sea of concrete and brick in place of verdant fields and forests. The change was so sudden that this growth could really have become blight, as has happened in so many areas where crowded houses have taken the place of homes. Fortunately, a number of far-seeing citizens recognized that a home includes the whole environment, the woods and streams, the opportunity for recreation in the outdoors, as well as schools, businesses and other services needed by modern Americans.

Using the Park Authorities Act enacted by the state legislature in 1950, these people encouraged the Board of County Supervisors to appoint a Fairfax County Park Authority to secure land for parks, recreational areas and open spaces before it was overrun by bulldozers. To provide parks of varied kinds to meet different needs, the Park Authority's program was aimed at a number of goals.

Following a survey made by the National Recreation Association, the plan is to provide a neighborhood park of about 5 acres adjacent to every elementary school, and a community park of about 20 acres near the high schools and related to the complex of subdivisions. Believing that opportunity for close contact with the environment of nature is an essential attribute of education, these parks are selected to preserve the natural beauty and features, as well as to permit expansion of space for active recreation where needed. Beginning with a few areas generously donated by landowners and developers the Park Authority is now buying land for such parks, of which 17 have been established.

Preservation of water resources and soil and prevention of floods and siltation has been aided by a county ordinance restricting floodplains of streams from construction activi-



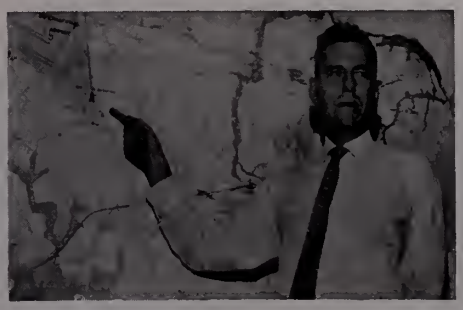
Bull Run Regional Park comprises 500 acres bordering on historic Bull Run and Club Run in Fairfax County, set aside for the enjoyment of the people of northern Virginia.

ties; but permanent security of these resources requires public ownership of the stream valley land. In 1952, the Capper-Cramton Act was extended to the environs of Virginia near the nation's capital, and it provides authorization for federal appropriations for one-third the cost of such land along certain streams named in the Act. Much floodplain has been donated, and other tracts are being purchased.

The Park Authority has undertaken special projects to protect outstanding features and to provide recreation. Great Falls Park on the Potomac River, administered in cooperation with the National Park Service, combines scenic grandeur, historic remains of the Potowmack Canal and locks built by George Washington and Lighthorse Harry Lee in 1785, 800 acres of magnificent forest with its wildlife, and a popular picnic area, visited by some 250,000 people a year. Sully Plantation, the 1794 home of Richard Bland Lee, Virginia's first congressman, on the Dulles International Airport, was transferred to the Park Authority by the Federal Aviation Agency, and its full restoration has begun.

In 1959, an appeal was made to the Park Authority by the Izaak Walton League, the Sport Fishing Institute, and other conservation organizations to undertake the raising of funds for the land needed to create a 218-acre lake near Burke. The Commission of Game and Inland Fisheries determined the site to be ideal, and agreed to allocate $140,000, in part from Dingell-Johnson receipts, to build the dam and clear the site. Time was short, but $92,000 was obtained from several private and public sources, and the largest lake yet built by the Commission is now filling and will be open in 1963. While the lake will be used primarily for fishing and boating, the Park Authority considered this a major asset to the whole community and owns 256 acres on the shoreline for other activities. Part of the park was opened to camping in 1960, the first time a Boy Scout or Girl Scout or family had a place to camp on publicly-owned land in the Northern Virginia region east of Shenandoah National Park.

The Fort Belvoir Reservoir, including 242 acres of which 110 is in water area, was licensed to the Park Authority by the Army in 1960 for public park purposes. Located near Springfield, Lake Accotink has become a popular fishing, boating and picnicking area, and additional land to provide space for camping has been purchased there.



The author points to a map showing the impact of the huge new Dulles International Airport on the landscape of northern Virginia.

With all these objectives, there remained one in which it was felt all of the Northern Virginia region should join—provision of large regional parks. These would be extensive natural areas, disturbed as little as possible, where people could come to find release from the tensions of an increasingly urbanized culture. Arlington County and the cities of Falls Church and Alexandria had almost no open space left that could be assigned to park purposes, and their citizens must perforce depend on Fairfax and other outlying counties for this resource. Accordingly, in 1959, the Northern Virginia Regional Park Authority was formed, with Fairfax, Arlington and Falls Church as members. Each jurisdiction appoints two members to the authority and contributes financially in proportion to its population.

"Only through a vigorous substantial park program can the ability of all people to enjoy open spaces within reasonable distance of their homes be assured." Above, a scene in Brookfield Park.

The first regional park was acquired almost at once on Bull Run, where 518 acres of forests and meadows, extending three miles along Bull Run and about an equal distance along Cub Run, is actively enjoyed by campers, hikers and nature students. Development is simple, aimed at pioneer-type camping and encouragement of the benefits achieved by personal experience in the unchanged out-of-doors. A second regional park has been inaugurated on Pohick Bay, where 200 acres are so located as to permit future development of a marina and open water activities.

Today, 10 years after the first county park was acquired, the Fairfax County Park Authority administers about 1400 acres, exclusive of 782 acres at Great Falls leased by National Capital Parks, and the Regional Park Authority 700 acres. This represents a growth from only 380 acres of parks in July, 1959. Such progress has been possible only because of the wholehearted support given the program by the Board of County Supervisors and other governing bodies, and the planning offices and other agencies, and the recognition in that year that provision of funds for acquisition of land by means of direct appropriation is too slow and too limited to keep ahead of increasing subdivisions and other construction projects. Public sentiment had come to realize that if Fairfax County is to remain an attractive place to live graciously and to raise children safely and healthfully, action must be accelerated to safeguard adequate open space and that time was short.

A $4,800,000 bond issue for parkland acquisition was proposed in Fairfax County and although the period to explain the program to the people was short, it was approved by the voters at the November election. This permits the Park Authorities to buy land at today's prices before values reach stratospheric levels, while spreading the expense at a low rate on the tax dollar so that people coming into the county to live share with those already resident the cost of the parks they will use.

Even with this large step forward, there are many problems and needs not yet met. There still is not a single publicly-owned tennis court or golf course in Fairfax County. Every mile of bridle trail is on private land. Camping facilities are seriously inadequate, and no provision has yet been made for a place where visitors coming to the nation's capital on camping trips may set up a tent. Bulldozers continue to scalp land, with concomitant destruction of forests and erosion. Streams are increasingly polluted by silt and wastes, in spite of sound ordinances. Only through a vigorous substantial park program can the ability of all people to enjoy open spaces within reasonable distance of their homes be assured.

With his mobile radio installation, Jerry Hammer of Richmond can keep track of the location of his hunting partners.

Sportsman's Communications - -

THE OUTDOORSMAN AND TWO-WAY RADIO

Text and Photos by RONALD F. MARION
Richmond, Virginia

THE sun is setting and the hills are growing cooler. The thrill of the kill has waned, but will again be brought to reality before a crackling fire and the pleasant but pungent smell of nitro solvent. All you have to look forward to now is the unpleasant task of field dressing and carrying out that prize 12-point buck through a dark and now unfriendly forest. The prospect, if not black, looks exceedingly gray. But now it need not be so, for the same minds that gave birth to other modern machines have also spawned a device for your comfort, convenience, and safety —the compact, portable, two-way radio.

In September, 1958, the Federal Communications Commission set aside the 11 meter amateur radio band, sliced it up into 23 channels for short range communications, and thus was born Citizens Band Radio.

Unlike other amateur radio, it is unnecessary to take a test to obtain a Citizens Band radio operator's license. Basically, you need only be 18 years of age or older and a citizen of the United States to license a transmitter. For walkie-talkie to walkie-talkie communication, even this is not necessary.

As far as the sportsman is concerned, Citizen's Band Radio may be divided into three classifications: (1) hand held, transistorized, self contained battery units; (2) mobile units for automobile or boat; and (3) base units operating on 115 volts for home or lodge.

The Walkie-Talkie

Newest and smallest of the "CB" equipment is the transistorized, hand held transceiver (transmitter - receiver). These walkie-talkie units are small and compact, weighing in the neighborhood of two pounds. Although this is a heavy neighborhood for climbing mountains and staying on the heels of a bird dog, this modern unit does fit well in the pack or lunch box. It is a natural for the canoe, duck boat or blind. In some cases space is saved by utilizing the speaker for a microphone. It is a very comforting feeling to know that you have a direct line to the base camp when rough water threatens your duck blind. The dove field and deer drive are two other locations made for the walkie-talkie. Firing line officials and pit crews in shooting matches could advantageously use this equipment, too.

The published range of this type of unit is about one mile or line-of-sight, but the author has obtained as much as three miles in communications with a mobile or base station. These little gems will transmit a signal a great deal farther than they are capable of receiving one in return.

The unit the author uses was assembled from a kit with nothing but a soldering iron, screw drivers, pliers, wire cutters, and three hours time. No knowledge of radio or electronics is necessary. Prices range from under $40.00 in kits to close to $150.00. Different types of batteries, from standard pocket radio types to rechargeable nickel-cadimum models are used. Antennas are integral and telescoping.

There are always new additions to old tradition. To the hunting knife and shotgun now can be added a portable radio-phone.

Announcing your arrival by boat (in this case to pretty Edie Shultz) is easy by "walkie-talkie."

Mobile Transceivers

By far the most popular of the CB units is the mobile six or 12 volt battery operated radio for the car or boat. Available in many models and price ranges from about $50.00 to well over $200.00, these units will give reliable service to the sportsman up to 30 miles depending on the type of terrain.

Where most of the walkie-talkie variety of transceivers utilize only one channel to transmit and receive, these larger and somewhat heavier mobile units are equipped with as many as six channels. Some even have a variable tuner on which all 23 channels may be monitored, although transmission is possible on only six.

The type of antenna normally encountered for use with this automobile radio is a nine-foot steel whip mounted on the rear bumper or permanently to the rear deck. The author has settled on a four-foot fiberglass whip mounted on the rear deck of his compact. This type of installation offers less chance of damage from low hanging trees for the sportsman. It also helps to avoid the impression that someone has affixed a small car to a large antenna. In some cases, a small amount of ignition and generator noise will be encountered, but this can usually be remedied by a visit to your local auto radio man or the installation of suppressors recommended by the radio manufacturer.

Base Stations

Since nearly all of the above-mentioned mobile units will operate on 115 volts AC or may be adapted to do so, the base station is merely a mobile unit with a larger and higher (limited to 20 feet by FCC regulation) antenna mounted on the roof of your home or hunting lodge. Because, by FCC regulation, citizen's band transmitters are limited to five watts (100 miliwatts for walkie-talkies), your base antenna is your key to maximum range. Choice of the antenna will be dictated by geographical and financial restrictions only.

In many cases, one radio will serve the function of both base station and mobile rig, by simply picking it up when you leave your home and plugging it into the cigarette lighter receptacle in your automobile.

Since World War II, Mr. American has become a do-it-yourself fan with everything from airplanes to electric organs. Radio, once the exclusive domain of the "ham," is no exception. Citizen's Band radios are available in kit form ranging in cost from $35.00 up. Most of these units are well engineered and require a minimum of tools for assembly. Again, no electronic experience is necessary although a certain amount of dexterity with a small soldering iron is desirable. Almost every large city has its CB club. Your local electronics dealer should be able to put you in touch with one. A letter to the FCC, Washington 25, D. C., requesting Part 19, Citizen's Radio Service Regulations, will bring helpful information on general requirements.

So, Mr. Sportsman, there you have it—another tool for your safety and convenience! Not a cure-all for every unpleasant task afield, but like a good dog or an old hunting partner, there when you need it.

Citizens Radio Manufacturers

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Shell Electronics Mfg. Corp., 112 State Street, Westbury, L. I., N. Y.
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Photo by Allan D. Cruickshank from National Audubon Society

Called "pat" in the North and "pheasant" in the South, the ruffed grouse is a top-flight game bird that requires hard work to hunt successfully.

Grouse Hunting In Virginia

By GEORGE McKENNA
Richmond, Virginia

THE ruffed grouse is regarded as the top game bird in many northern states. It can also be found all through mountains of western Virginia, where it is usually called either "pheasant," or "mountain pheasant." But, except for a comparatively few dedicated sportsmen who have learned about the good shooting "old ruff" can offer, it is sadly neglected by hunters here.

This neglect is not due to any lack of places where the average hunter can look for grouse. The million and a half acres of national forest land in the Old Dominion contain many good grouse covers which are seldom hunted; and more good, but little hunted, covers can be found on such state-owned or managed public hunting grounds as the Gathright tract in Bath and Allegheny counties and the Ward-Rue area in Madison and Greene counties.

All of this land is open to the public. Only the proper licenses are needed to hunt on the state-owned or managed tracts, and only the special one dollar stamp, plus regular licenses, are needed on the national forests. None of this land is crowded with hunters after the deer season, and as long as the snow holds off it offers good grouse shooting.

The first thing the hunter should look for when he goes after grouse here is the proper combination of food and cover. Grouse like tight growing clumps of hemlock for shelter, and feed on such things as white oak acorns, greenbriers, wild grapes, wintergreen, sheep sorrel, dogwood, poison ivy, and asters. Most of these plants and trees can be found in or near the wildlife clearings that are scattered through both the national forests and the state-owned or managed lands, and these wildlife clearings are ideal for grouse hunting. All plant growth in these mountains is heavier on the north and west slopes than it is on the drier slopes to the east and south. Since the better plant growth

Commission Photo by Kesteloo

Not many hunters kill their limit of grouse with regularity.

supports a higher population of grouse, the best hunting is usually found on the north and west slopes of the mountains.

Laurel and rhododendron thickets are also good for grouse because they furnish both food and cover, but they form a tight growth that is difficult to hunt. A well-trained bird dog will greatly increase the pleasure from any grouse hunt in these mountains, and is a necessity for a successful hunt in the thickets. Since the covers are usually tight, a dog trained to work close to the gun will give better results than one that ranges far ahead of the hunter.

The one type of cover that can often be hunted successfully without a dog is found on the floors of the deep hollows or "drafts" that are cut into the steep mountain slopes. Hemlocks often grow in thick clumps along the bottoms of these hollows, and are used by the grouse as shelter. Laurel and rhododendron provide more shelter as well as food, and wild grapes, greenbriers, and white oaks that

Commission Photo by Kesteloo

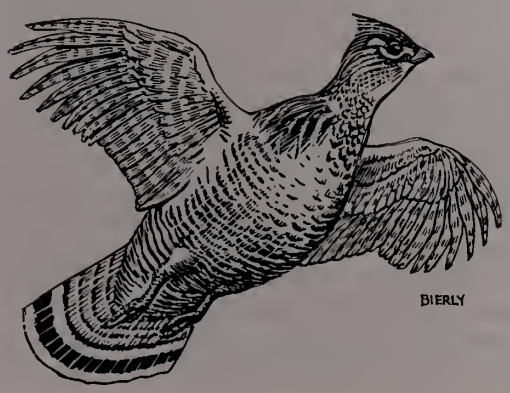
A dog trained to work close to the gun will give best results with grouse.

grow near the hemlocks make an excellent source of food.

The way to hunt these covers is to climb up to the crest of the mountain and then work slowly down each hollow from its head. If there are two hunters, one of them can take each side of the bottom of the hollow, and if one man is hunting alone he can move back and forth across the hollow, zig-zagging as he works down it.

It is important to hunt these hollows very slowly and carefully, and to stop at intervals of 50 feet or so. Grouse are likely to move ahead of the hunter, but they also are likely to freeze against the ground and let him walk right by. When the hunter stops it seems to unnerve old ruff, with the result that he flushes with a loud drumbeat of his wings. Sometimes he flushes directly behind the hunter, out of a clump of leaves that was stepped over a few minutes earlier.

When the grouse flushes it flies fast, and is likely to put a tree between itself and the hunter in short order. George Gehrken of Franklin, Virginia, spent half an hour last spring explaining to me that this is not done intentionally, but happens only because grouse fly in a curve when they



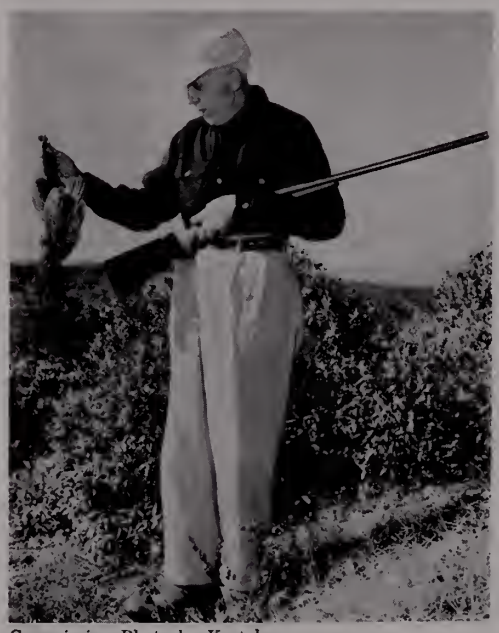
Grouse fly fast, and often put trees between themselves and the hunters in short order.

are flushed. Since they are most likely to be flushed in an area where trees are plentiful, it is a natural result for those trees to appear between the hunter and his target.

George is a trained biologist, and his explanation makes sense. But as far as I am concerned the result is exactly the same as it would be if the grouse intentionally put a tree between himself and my gun.

The snap shot who picks out an opening where he expects the bird to appear, and then tries to put his load of shot into that opening at the exact moment the target reaches it, will probably do much better on grouse than the man who swings his gun after the bird and follows through when he shoots, as I do. But any kind of a wing shot will find plenty of opportunities when he tries for grouse in these mountains.

Field loads of number 7½ shot make a good grouse load in either 12 or 16 gauge guns, with the equivalent of 3¼



Outdoor Life Field Editor Arthur Grahame admires a Virginia ruffed grouse.

Commission Photo by Kesteloo

drams of powder and 1¼ ounces of shot ideal for the 12. In the 20 gauge, which I like to use because it is faster to swing after these swift flying birds, I prefer the high velocity loads. But I still stick to number 7½ shot.

Twenty-six-inch barrels are best in all gauges, with the improved cyclinder choke best in the 12 and 16, and the modified choke probably best in the 20. A double with 26-inch barrels bored improved cylinder and modified choke would be the ideal grouse gun in gauges 12 to 20.

The fit and balance are important factors in any shotgun used for wing shooting, but the weight must also be given careful consideration for a gun to be used hunting grouse here. Climbing the steep slopes of the Blue Ridge and Allegheny mountains to reach the good covers is real work. At the end of a day spent scrambling over one high ridge after another, the hunter won't want to carry one ounce more than is absolutely necessary.

One solution to the weight problem can be found in an idea used extensively on shotguns in Europe, but only on rifles in this country, and that is to fit the gun with a set of swivels and a carrying strap. While climbing a mountain, it is much easier to carry a gun of any kind slung from the shoulder than it is to carry it in one hand . . . and the grouse hunter in Virginia has to climb a lot of mountains if he wants to find really good shooting.

Forest Recreation -- HOW MUCH ?

By CHARLES T. CUSHWA

FEW people have any real illusions about the importance of forest recreation. In the mad scramble of our society today an increasing number of people are seeking and finding freedom from the pressures and cares of modern urban living. Our forests furnish an excellent source of outdoor recreation. There are many forms of forest recreation; notable, of course, are the picnicking and camping in developed parks and improved sites. Perhaps less familiar but extremely important to many persons are such things as bird-watching, hiking, nature study, nature photography, and just plain enjoyment of the forests. Collectively, all of these uses are enormous, important, and to a degree at least dependent upon good forest management.

Essential in the management of any resource is factual knowledge of its use. This is important in forest recreation for this knowledge must serve as a base for the management of present recreation facilities and opportunities, as well as preserving, protecting, and developing for future resource uses. When the forest manager looks for a place to develop for recreation, inevitably he asks the question—how much use and what kind of use is the forest now receiving?

Recognizing the need for this information, the Virginia Cooperative Wildlife Research Unit, working directly with the Virginia Game Commission and the U. S. Forest Service, is conducting a study which has two very meaningful objectives for forest recreationists. The first is to devise an inexpensive, feasible means for quickly estimating how much and what kind of recreation is occurring on any respective large unit of forest land. The second objective is to perfect a practical means of predicting changes in this use.

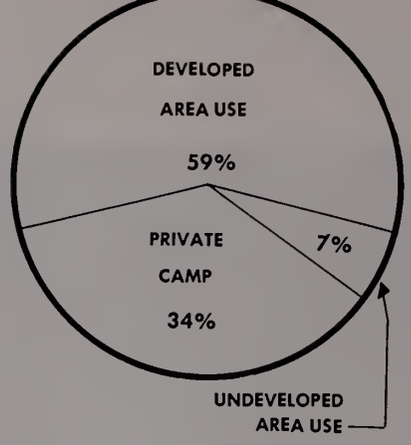
Approximately 100 square miles of the George Washington National Forest, in an area locally known as North River, was selected to pilot-test the sampling scheme designed to meet the two objectives. North River is a magnificent "stretch of country" affording enormous outdoor recreation opportunities, and is ideally situated with respect to a number of large metropolitan areas. Use of the forest varies from hiking and nature study to camping and picnicking on developed areas. The area contains some of the finest trout streams in the East; it enjoys a reputation for excellent big-game hunting, supports a large population of turkey and grouse, and is a favorite area of many small-game hunters. Access is afforded by an excellent system of forest roads and trails. Other activities involving water management work and studies, timber management including insect and disease control and small logging operations, wildlife management, roads and trails construction and maintenance, a city water supply, and many other problems are being currently handled there on a multiple-use management basis.

The job of estimating use in this area of slightly more than a hundred square miles was boiled down to the simple proposition of sampling people—people who use the forest—as they leave the area by the various ways of travel. All possible exits from the area and all possible hours of departure have been learned and are being sampled. Between June 17 and August 31, 1961 (75 days), intensive sampling of recreationists leaving this 100 square miles has yielded some extremely useful data. During this period nearly 300 parties were interviewed and the results yielded a good estimate of the total use the area received. Taken together, commercial, residential, and recreational use made up a total of 220,000 man-hours. For those who like to "figure with figures," this would amount to approximately 30 hours of use per square mile per day.

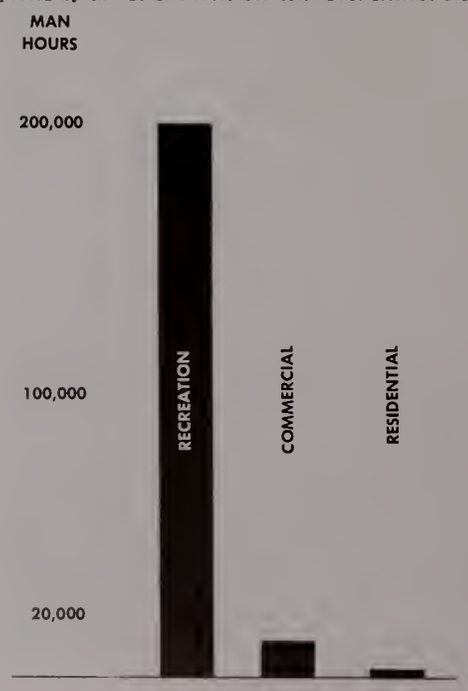
Though the study is concerned with total use, the primary objective is aimed at recreational activity; and although the first 75 days of sampling were during the summer only, it is interesting to examine the broad components of the recreation-use figure. The pie chart shows clearly that recreational use on developed areas (largely Forest Service camping and picnicking sites) constituted a very large percentage of the total recreational use with nearly 60 per cent associated with developed area activity. It is also interesting and extremely important to see that the use of permanent private camps was very high, suggesting that these camps provide an important source of recreation. While recreation use on undeveloped areas was rather low, it should be remembered that this estimate was developed during a time of year when very little hunting and fishing took place. This is certain to rise impressively, however, during other seasons.

Though not final, studies of this kind are essential to the better management of our forest lands. The North River is beginning to yield data of great value, and the contribution of this work and other studies which will follow is virtually immeasurable to millions of people who depend on the forests of this country for wholesome, healthful recreation.

The author is a graduate student at Virginia Cooperative Wildlife Research Unit, Blacksburg, Virginia. Cooperating agencies: Virginia Commission of Game and Inland Fisheries, Virginia Polytechnic Institute, Wildlife Management Institute, and U. S. Fish and Wildlife Service. This study supported by the U. S. Forest Service. Unit Release No. 61-4.



The pie chart shows that use of developed areas —largely Forest Service camping and picnicking sites—constitutes a very large percentage of the total recreational use during the summer months.



In the bar graph, the place of forest recreation is obvious. Of the total 220,000 hours, over 200,000 were devoted to recreational pursuits. When over 90 percent of the total human activity in a large block of forest land is recreational, the figure is indeed impressive.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

NEW PUBLIC HUNTING AREAS IN WESTERN VIRGINIA. The Virginia Commission of Game and Inland Fisheries has taken option on an 18,466-acre tract of land in Russell, Smyth, and Tazewell counties for a new public hunting area. The tract, to be known as Clinch Mountain Wildlife Management Area, will provide a state-owned recreation area for residents of southwestern Virginia.

Primarily in wooded country, the Clinch Mountain area will provide both big game and small game hunting. Big Tumbling Creek which flows through the area offers some trout fishing. A good site for a fishing lake is present on the area and may be developed at some future date. Purchase of the area should be completed shortly after January 1, 1962. The land is being purchased by the Commission from the Stuart Land and Cattle Company.

The Virginia Game Commission has also announced that it is about to purchase 6,400 acres of land in Washington County for the establishment of another wildlife area, to be known as the Hidden Valley Wildlife Management Area. Hidden Valley is a naturally wild and remote area with both fishing and hunting possibilities. Deer and turkey will be stocked on the area to bolster present low populations. With adequate protection from stray dogs, wildlife on the area should provide good big game and forest game hunting.

An 80-acre artificial lake is already present on the area and the commission's fish division plans to make it into a state trout lake. After repair work is completed on the dam, the lake will be stocked with rainbows. Biologists hope that the natural growth in the lake will provide the anglers with good-sized catches. The stream below the dam should provide good trout fishing after it is stocked next spring. Purchase should be completed by January 1.

CLOSED SEASONS TO BE ELIMINATED ON WARM-WATER FISH. The Virginia Commission of Game and Inland Fisheries proposed that all closed seasons on warm-water fish be eliminated in 1962 as part of their action at their fall meeting in Richmond to consider proposals for this year's fishing regulations. Termed as "biologically unnecessary" by fish biologists, the closed seasons on all fish except trout are scheduled to be removed in an effort to simplify regulations, making them easier to enforce and easier for the fisherman to comply with. Creel limits on all species will be left as they are stated in the regulations.

The Commissioners voted to repeal the regulation prohibiting ice fishing on inland waters. If the regulation is taken off the books, fishing through the ice will be legal in accordance with the regular license, creel limit, and season requirements.

The trout regulations as proposed were basically unchanged from those of last year. If these regulations are adopted, the 1962 trout season will open at noon, April 7, with a daily creel limit of 8.

Final consideration and action on fishing regulations will be taken up at the next meeting of the Commission scheduled for January 5 in Richmond.

WARDENS FREED FOR FULL TIME GAME WORK. Three more Virginia counties have voluntarily taken over dog law enforcement relieving state game wardens in those areas of this responsibility. The wardens who will now turn their attention to full time game work are J. W. Crumb and R. T. Charnock of Northampton County, C. T. Bland of King and Queen County, and Charles Torrence of Appomattox County.

This brings the total number of counties which have voluntarily taken over the responsibilities of dog law enforcement to 86. Funds previously turned over to the commission for dog law enforcement will now be retained by these counties to finance their own dog control programs.

A flight of green-winged teal alight in a cattail marsh.

Waterfow
By Lynn

The waterfowl paintings on these pages were drawn by E. Lynn Forehand of Norfolk, to architecture, Mr. Forehand for the past 10 the Tidewater area. As a boy, he became inter folk and Princess Anne County area, and it illustrating waterfowl. Checking mounted spe ing these birds in Tidewater Virginia's bays hours in pursuit of this, his favorite hobby. We his work to our VIRGINIA WILDLIFE readers.

Three blue-winged teal head for a tidal river.

Mallards—two drakes a

Paintings
Forehand

the cover of this issue of VIRGINIA WILDLIFE
nia. With interests that vary from antiques
has been with leading architectural firms in
in Virginia's wildlife in and around the Nor-
ring these years that he became interested in
s for details and spending much time observ-
marshes, Mr. Forehand spends his leisure
pleasure in presenting these reproductions of

A small flock of redheads drop out of the sky.

en—sight open water.

Hen and drake pintails prepare for a landing.

Uniform Hunter Casualty Report

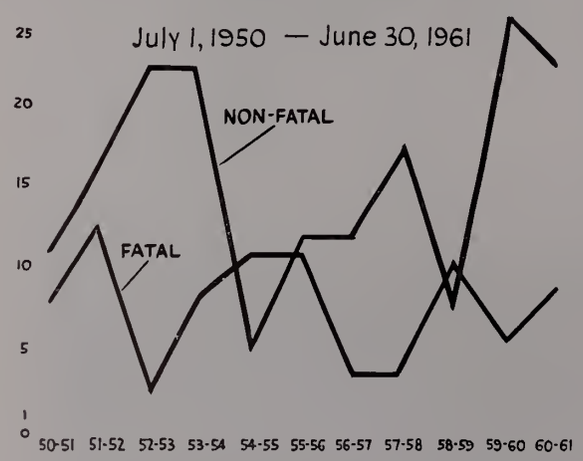
July 1, 1950 - June 30, 1961

VIRGINIA COMMISSION of GAME AND INLAND FISHERIES

Hunter Safety Education -- WHY?

By JAMES N. KERRICK
Safety Training Officer

EVERY hunting season in the state of Virginia approximately eight hunters die because they either handle their guns carelessly or are mistaken for game by other hunters. Hearing some commotion in the brush does not constitute a reason for a hunter to make a "sound shot" at something he thinks may be legal game. It is better to come home empty handed than have to return home and inform the widow of your buddy that you shot her husband because you thought he was a deer; yet this happens every year. Why? Is it inexperience on the part of the hunter, or is it just plain carelessness?



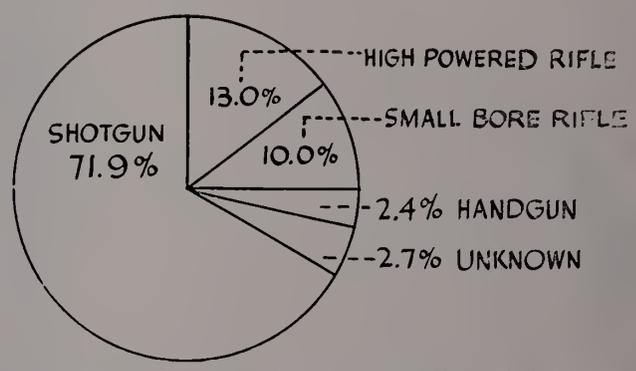
Over an 11-year period in Virginia, an average of eight hunters have been killed with firearms each year and an average of 15.5 persons each year have been injured in hunting accidents involving firearms.

Most hunters are taught to be careful from the time they are big enough to hold a gun in their hands, but evidently this is not enough because, during the period July 1, 1950, through June 30, 1961, 260 hunting accidents involving firearms were reported to the Virginia Commission of Game and Inland Fisheries. Eighty-eight or 33.8 percent of these accidents resulted in the death of the victim.

We need to educate the young hunter because 39.6 percent of the 260 accidents were caused by hunters who were 19 years old or younger. Only five percent were caused by hunters over 60 years of age. A review of the hunting accident reports that in most cases the visibility was clear and the cover open, which means that these accidents could have been avoided if the shooter had *looked before he shot.*

The old adage that a rifle is more dangerous than a shotgun is thrown out the window by the statistics, for 71.9 percent of the 260 accidents were inflicted by shotgun; only 23.0 percent were inflicted by rifles, including .22's. Let's face it: Any type of weapon is dangerous if it is not handled correctly. Can you imagine a hunter shooting another hunter because he saw the tail of a gray squirrel hanging out the other hunter's coat pocket? This actually happened and could have been avoided if the shooter had taken a minute more to see what he was shooting at.

What can we, as hunters and outdoorsmen, do to cut down if not eliminate these hunting accidents? We need to educate the young people in the proper handling of firearms, in the identification of game, and in conservation as a whole. The education of young hunters can be accomplished by sportsmen serving as hunter safety instructors. These men can teach the young hunters of today the proper handling of firearms, the proper identification of game, and, above all, how to be real sportsmen. And your game commission now stands ready to help interested sportsmen become certified firearms safety instructors.



Shotguns are involved in almost three-quarters of Virginia's hunting accidents, according to the "type of weapon involved" pie chart, above.

On October 15, 1961, the Virginia Commission of Game and Inland Fisheries entered into a hunter safety program cooperative agreement with the National Rifle Association. Since that date, hunter safety programs have been given in South Hill, Suffolk, Blackstone, Martinsville, Fairfax, and other communities.

As of November 1, 1961, Virginia had 278 approved hunter safety instructors, and 5,757 students had graduated from the Hunter Safety Course. It is the aim of the commission, within the next five years, to qualify no less than

Hunting Casualties By Distance

July 1, 1950 – June 30, 1961

Distance from Muzzle to Wound	Number	Per Cent
0-10 YARDS	123	47.3
10-50 YARDS	51	19.6
50-100 YARDS	27	10.4
100 or more YARDS	13	5.0
UNKNOWN	46	17.7
TOTAL	260	100.

The victims of almost half of the 260 hunting accidents with firearms reported in Virginia during the past 11 years were standing less than 10 yards from the muzzle of the gun.

2,000 instructors and graduate 40,000 students from the Hunter Safety Course.

This program is worthy of the personal interest and support of every hunter and target shooter. The program means greater safety for all, more fun and a chance to guide youngsters and new shooters of all ages along the right path from the beginning.

It is our sincere hope that sportsmen throughout the state of Virginia, either as groups or as individuals, will take advantage of this opportunity to become certified NRA hunter instructors. Youngsters receiving the instruction outlined in the teaching manuals will be entitled to wear the official NRA "safe hunter" emblem. It has been proven that a trained teenager is safer than an untrained adult.

Sportsman's clubs or individuals who would like to promote a hunter safety program are requested to contact the Safety Training Officer, Education Division, Commission of Game and Inland Fisheries, Richmond, for guidance and material needed to present a Hunter Safety Course.

Hunter Casualties By Age Of Shooter

July 1, 1950 — June 30, 1961

19 years or under	59	35.8%
20 to 29	20	12.1%
30 to 39	26	15.8%
40 to 49	10	6.0%
50 to 59	9	5.5%
60 or over	13	7.9%
UNKNOWN	28	17.0%
TOTAL	165	100.0%

Hunting Casualties by Animals Being Hunted

Tabulation for July 1, 1950 - June 30, 1961

DEER	71	27.3%
RABBIT	66	25.4%
SQUIRREL	62	23.9%
QUAIL	15	5.8%
DUCK	9	3.5%
WOODCHUCK	5	2.0%
TURKEY	4	1.53%
FOX	3	1.2%
COON	3	1.2%
GEESE	2	.7%
DOVES	2	.7%
BEAR	1	.4%
GROUSE	1	.4%
TARGET SHOOTING	1	.4%
QUICKDRAW	1	.4%
UNKNOWN	14	5.4%
TOTAL	260	100%

Deer hunting, which often involves large concentrations of hunters, appears to be the most dangerous.

Hunter Casualties By Age of Victim

July 1, 1950 — June 30, 1961

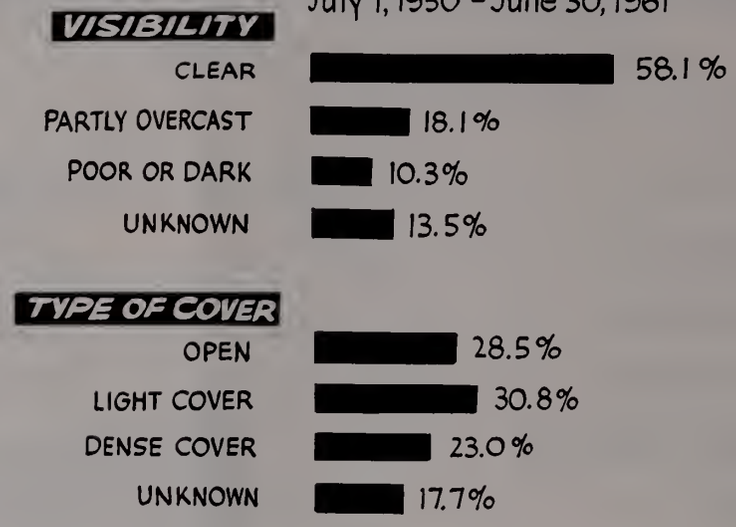
19 or under	103	39.6%
20 to 29	51	19.6%
30 to 39	38	14.6%
40 to 49	25	9.6%
50 to 59	16	6.2%
60 or over	14	5.4%
UNKNOWN	13	5.0%
TOTAL	260	100.0%

More than a third of our accident-causing shooters and their victims are less than 20 years old. This is why the Virginia Commission of Game and Inland Fisheries is working with the National Rifle Association to encourage the training of teenagers in hunter safety.

Hunting Casualties By Visibility and Type of Cover

July 1, 1950 - June 30, 1961

Most hunting accidents take place when the visibility is clear and in cover which is either open or light. The shooters just didn't take time to identify their targets.



Typical of many hunter safety instructor courses being given now throughout the Old Dominion was this one conducted by Game Commission Safety Training Officer Jim Kerrick for members of the Richmond Chapter of the Izaak Walton League of America.

The Time Of Day Casualties Occurred

July 1, 1950 – June 30, 1961

The chart at right only seems to indicate that hunters aren't getting up very early anymore.

1: A.M.	0	1: P.M.	9
2: A.M.	0	2: P.M.	21
3: A.M.	0	3: P.M.	30
4: A.M.	1	4: P.M.	28
5: A.M.	0	5: P.M.	20
6: A.M.	2	6: P.M.	6
7: A.M.	17	7: P.M.	2
8: A.M.	15	8: P.M.	0
9: A.M.	20	9: P.M.	0
10: A.M.	19	10: P.M.	3
11: A.M.	25	11: P.M.	0
12: NOON	15	12: Midnight	0

UNKNOWN 27

43.9 % occurred in the A.M. Hours • 45.7% occured in the P.M. Hours
10.4% are unknown

Wildlife Conservation Unit 1, Fish and Fishing

Study 1 - -

The Parts of a Fish and Their Functions

By DOROTHY E. ALLEN
Education Officer

FISH are mysterious because they live underwater where it is hard for us to see and study them. Fishing practices are as old as man himself. Early in his evolution, man found hunting and fishing necessary to obtain food. Today we fish not so much for food as an excuse to be out in nature and perhaps to prove we're smarter than that hidden swimmer.

Fishing is the most popular participant sport in the United States. In 1960, 45 million Americans fished at least once. These folks spent about three billion dollars in pursuit of fish. Fishermen come from all walks of life. Neither wealth, position, creed, age, nor sex eliminates anyone from participation in this healthful and relaxing recreation.

Modern fisheries management is based on an ecological approach which considers all factors bearing on the health of fish populations. Fish are vulnerable to changes in their environment made by *pollution*, which, because it eliminates the oxygen available to the fish, tends in almost every instance to eliminate them from the waters concerned, and by *deforestation* and *drainage* of land for agricultural or industrial use which interfere with fish habitat by elimination of food and cover. warming of the water, and the addition of silt which clogs fish gills and kills plant life. Fish will respond remarkably to fish management techniques, but only if their needs are known and taken into consideration.

Laws and regulations based upon knowledge of life histories and habits can be effective conservation measures. Fish management techniques including the manipulation of the environment to provide increased food, shelter, and less silt, as well as ways of creating new fishing waters to produce fish as a crop to be harvested for recreational purposes will be explained in this study. To understand how to solve our fish problems we must first understand fish.

Attention, Teachers

WHAT youth doesn't like to fish? It's a thrill for every youngster to feel a tug at his line and pull in a squirming fish—even if it's only a three-inch bluegill! For generations, boys have preferred fishing to school! I wouldn't be surprised if at least once in *your own* life you played hooky in the spring to see if you couldn't outsmart a fish. There is such a natural interest in fishing that teachers really should enjoy instructing their students in a "fish unit."

Living things appeal to youngsters. The enthusiasm is *there*, bottled up in your classroom. Using lessons in WILDLIFE issues between now and June, you and your class can learn about fish and, we hope, end up catching more fish and having more fun fishing this summer as a result. In fact, you might start planning a fishing contest now for that final outing of the school year.

Each month we will print a study plan that you can fit into your already full schedule, adapting it to the level you teach. Change this study to fit your own needs. Present the material in accordance with your own method of teaching. Correlate it with general science, biology, social studies or English, or treat it as a separate course.

The best teachers I have known are ones who act natural and teach in their own individual fashion. Nature love tends toward naturalness, and toward simplicity of living. Take care your instruction does not crystallize into science-teaching on the one hand, or fall into mere sentimentalism on the other. If you teach something children are interested in and at the same time something that is as worthwhile as conservation of our natural resources, you will feel well rewarded because of your students' enthusiasm and the job you have done.

If you desire more information than what is printed here, write to FISH STUDY, Education Division, Commission of Game and Inland Fisheries, Box 1642, Richmond 13, Virginia, and we will help you in any way we can. Each study will include lists of available materials, films you can use, and suggested projects. The writer does not take credit for information presented in this study. It is a resume of facts gathered by men who have devoted their lives to this work.

Bait your curriculum hook with our lesson plans, and you may have *good fishing!*—D. E. A.

What Is A Fish?

Our *objectives* are:

1. To learn the parts of a fish and how these parts function.
2. To study in detail the specialized structures that permit fish to live in their environment (water).
3. To discover how to determine the age and rate of growth of fish.

The following *equipment* will be needed:

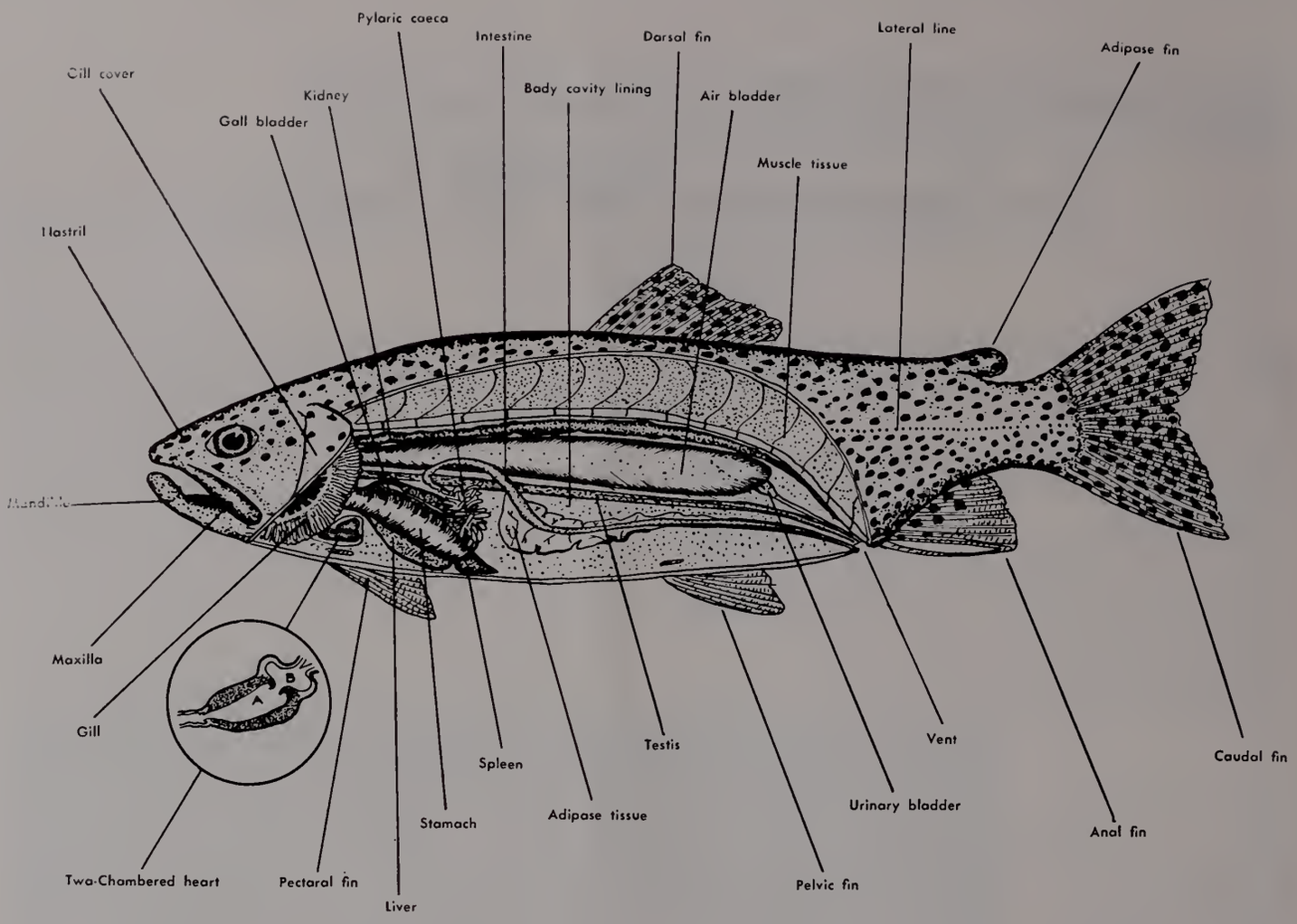
1. Fish—dead or alive. (Have a fisherman get you one and not clean it, or go to a fish market and buy one.) Have the class identify its various parts and learn how the fish uses these parts.
2. An aquarium with fish (goldfish will do) will help in demonstrating fish locomotion.
3. Low-power microscope or hand lens.

A fish is an aquatic vertebrate (lives in water and has a backbone). It has fins and breathes by means of gills. Its body is generally covered with scales. It lives in water where it must breathe, move, and find its food.

A fish has 10 systems of body organs banded together. These systems enable the fish to eat its food, dispose of wastes, adjust to changing conditions of its surroundings (water), avoid injury, and produce more fish. The systems are: (1) skin system; (2) digestive system; (3) waste system; (4) circulatory system; (5) nervous system; (6) glandular system; (7) respiratory system; (8) skeletal system; (9) muscular system; and (10) reproductive system.

Look at your fish from *above*. Note that the broader part of the body is near the front end, which is rounded so the fish can move through the water easily. The long, narrow rear portion of the body with the tail acts as a propeller in the sense that it pushes the body forward by pushing backward on the water, first on one side and then on the other. Compare this movement with how you swim or row a boat.

Look at the fish from the *side*. The body is a smooth, graceful oval, enabling the fish to move through water



swiftly. Cut a model of fish from heavy cardboard and try to move it through the water sideways. Can a boat go through the water sideways?

How does a fish swim? Three ways:

1. Fish have a mass of W-shaped muscle segments reaching from gills to tail. (This is the part we eat.) The successive contraction of the muscular segments, with their pushing against the water first on one side and then on the other, may be compared to the way a skater successively pushes against the ice with each leg.

2. Fin and tail aid in maneuvering and steering. They help the fish in diving and rising in the water.

3. Jet-propulsion. Streams of water pass through gills along the back and out by the tail. However, gills are primarily breathing organs and not swimming devices.

How fast do fish swim? These figures have been recorded: trout—23 m.p.h; pike—20 m.p.h; bass—12 m.p.h; perch —10 m.p.h.; carp—7½ m.p.h.; bluegill—¼ m.p.h. The sword fish and its allies are the most rapid swimmers.

The External Features of a Fish

FINS: A fish usually has seven fins. Fins aid in locomotion, but their chief function is in maintaining equilibrium (balance). They include the dorsal fin, which can be lifted or shut down like a fan or twisted from side to side, and is used in steering; the tail, or caudal fin; the anal fin; the pectorals (pair) which correspond to our arms; and the ventrals (pair) which correspond to our legs.

LATERAL LINE: This is a sensory organ along the sides of the body from head to tail. It is a line of modified scales containing small tubes connected with the nervous system. This is a very important organ for the perception of vibrations. It enables the fish to detect movements of other animals in the water.

GILL COVER: Covers the gills, the fish's "lungs."

MOUTH: In the process of breathing, a fish continuously works its mouth and gill covers. The common phrase, "to drink like a fish," is a misconception because fish consume very little water. In the fish's mouth are numerous taste buds very similar to those of higher animals. Food that is spoiled is very rapidly spit out.

TONGUE: In fish, it is very bony or tough and immovable. How does a fish's tongue compare with tongues of mammals? birds?

TEETH: Shape, number and position vary according to the food habits of the fish. Most fish have fine, sharp teeth, usually short and arranged in pads. Some fish have blunt teeth for crushing shells. Fish have teeth not only on the jaws but also on the roof of the mouth, on the tongue, and in the throat. Look at the fish you have. Can you find its teeth? Now look at a goldfish. See if you can find its teeth. The members of the minnow family have toothless jaws and bear teeth in the throat only.

NOSTRILS: The nostrils of fish have no connection whatsoever with their breathing. The nostril leads into a little sac enabling the fish to smell. Fish know the "smell" of their enemies because fisherman, after cleaning fish, wash their hands in their watery habitat.

TOUCH: Can fish feel? It has been found that fish have touch reception similar to that of man. All fish are provided with touch cells throughout the entire surface of their skin. Some fish such as the catfish have barbels or feelers which are used to assist it in finding its way about in the muddy or darkened stream bottom.

EYES: The fish has no eyelid. Its eyes are always wide open, even when it sleeps. Their eyeballs are movable, giving the impression that they wink. Fish can move each eye independently of the other so that they can turn one to look up and the other to look down, or one to look forward and the other to look backward. They see from a few to several feet depending on the clarity of the water.

Fish are very nearsighted. The lens of the fish's eye has to be spherical in order to see in the water. When you swim underwater can you see anything above the surface of water? Fish can. They can see insects flying above the water, letting them seize flying insects by leaping out of the water.

It has been argued for ages whether or not fish can see colors. No fish is definitely known to have color vision.

The Internal Parts of a Fish

TWO CHAMBERED HEART: Chamber "A" is muscular and thick walled, propels blood throughout the body. Chamber "B" is thin walled and less muscular; it receives blood from the veins and forces it into chamber "A." Chamber "A" empties into an artery which carries the blood to the gills where exchange of carbon dioxide for oxygen takes place. From the gills the blood, relatively high in oxygen, goes to all parts of the body.

BLOOD: All fish are cold blooded, in that the temperature of their blood is the same as that of the water in which they live. For this reason fish become sluggish in very cold or extremely warm water. Are mammals cold or warm blooded animals? What about birds?

GILLS: A fish constantly opens and closes its mouth. This action draws the water into the throat and forces it out over the gills and through the gill openings. This is the way a fish breathes. A fish cannot make use of air unless it is dissolved in water. Those pink fringes, the gills, are filled with tiny blood vessels. Through them the wastes carried by the blood stream pass out and oxygen passes in.

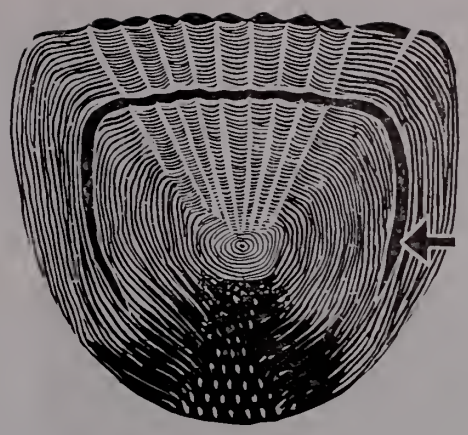
LUNG OR AIR BLADDER: This helps the fish to maintain a weight equal to the weight of the water. It regulates buoyancy, giving the fish the ability to rise or sink in water, and also serves as a reservoir for oxygen. Fish are often seen lying practically motionless; this is possible because of the air bladder. Another function of the air bladder is protection from pressure of the water on the fish. Fish seem to have the power to control and regulate the inflation of the bladder to meet the necessary requirements of function. When you see a dead fish floating on the water, it is because its air bladder is intact; if it has been broken, the fish will sink to the bottom.

EAR: Can you find a fish's ears? There is no outside structure. All fishes do have inner ears, basically similar to our own, and while the sound waves reach these auditory sense organs by different routes (lateral line through the body itself rather than through air filled canals), they stimulate the auditory nerve in very nearly the same way.

Normal talking does not disturb fish because vibrations set up outside the water must be quite strong to penetrate the water and thus be detected by the fish. However, vibraions set up in water (such as splashing) travel very easily and are readily detected.

At higher frequencies, fish are less sensitive to sounds than we are, but their hearing is not inferior to that of land animals in any basic way. Sound travels about four and one-half times faster in water than in air.

SCALES: The fish wears a coat of armor, either of scales or of tough smooth skin. This coat of armor is covered with a slimy substance (mucous) which reduces friction as it swims through water. When handling fish, wet hands should be used so as not to disturb this protective covering. The scales overlap like shingles on a roof, with exposed edges toward the tail. The number of scales a fish has remain constant throughout life. The scale grows as the body grows and he records his birthdays on his scales in the form of annual rings. Can you think of a living plant that records its birthday by annual rings? The year marks on fish scales are formed when a fish resumes active growth each spring.



This dark line is a "winter mark" on the scale of a bluegill well into its second year of life.

Place a fish scale under the microscope or a hand magnifying glass. You will see growth rings that look something like tree rings. Notice that certain ones of these are different from the others; these are the year marks or "annuli."

Suggested Activities

AQUARIUM: Almost any of the fish found in a brook or pond many be kept in an aquarium for a few days of observation in the schoolroom. A large water pail or a bucket does very well if no glass aquarium is available. The water in an aquarium should be changed often. Water plants and scavengers such as water snails kept in the aquarium keep the water from becoming foul. Add water to replace that which evaporates. If you have goldfish, be careful not to overfeed them.

Dissect a fish to study its internal structures.

Take scales from different fish and determine their ages.

Show a motion picture on fish and fishing.

Make colored paper fish with different words on each, such as "Fin," "Scale," etc. Let each student fish one out of a glass bowl and tell all about that part of the fish.

Some Reference Materials

Carpenter, Max M. "Acquire an Aquarium," VIRGINIA WILDLIFE, XX (May, 1959), 20-21.

Harrison, Hester C. (comp.). "A List of the Fishes of Virginia," VIRGINIA WILDLIFE, XXI (September, 1960), 16-19. Reprint B-2.

Norman, J. R. *A History of Fishes*. New York: A. A. Wyn, Inc., 1948.

Shomon, J. J. (ed.). *Freshwater Fishing and Fishlife in Virginia*. Richmond: Commission of Game and Inland Fisheries, 1954. Price: 25¢.

These 16-mm motion pictures are available from the game commission free of charge: Bass Waters in Virginia (19 minutes), Battling Bass (10 min.), Biography of a Fish (11 min.), Brooks and Rainbows (26 min.), Channel Bass and Stripers (11 min.), Channel Bass Country (16 min.), and Sunfish (11 min.).

NEXT MONTH: Study 2.—Fish Life Histories.

Bird of the Month:

The Woodcock

By DR. J. J. MURRAY
Lexington, Virginia

THE woodcock is one of our most beautiful birds. The underparts are a lovely shade of cinnamon-buff, brighter on the sides. On the back the cinnamon is mottled with bluish-gray. The head and neck have a lighter suffusion of this same cinnamon, the dark back of the head being crossed by several bars of this color. The markings on the back are often spoken of as a "dead-leaf pattern," a pattern which makes it difficult to locate a sitting bird.

The bird is about the size of a bobwhite, very chunky in shape, appearing to have almost no neck. The most striking feature is the bill, which is nearly three inches long. This bill has the remarkable feature of a flexible tip which enables the bird, probing in the mud, easily find a worm and then devour its prey or withdraw it from the mud.

The woodcock is sometimes confused with the Wilson's snipe. They are about the same size, but the woodcock is a much heavier bird in its appearance. Its wings are rounded, while those of the snipe are long and pointed. The greatest difference, however, is the flight of the birds. The woodcock's flight when flushed is straight, and the bird is either silent or makes a whistling noise, where the snipe dodges about in a zig-zag course, calling "scaipe, scaipe."

It is easy enough to miss seeing a woodcock. It prefers swampy places in the woods, where walking is not easy. It does not usually flush unless one walks very close to where it is resting. It is generally quiet in daylight, coming out at dusk for feeding and for its strange courtship flight.

In this courtship flight, which is a display before the female, the woodcock rises rapidly, then flies in circles high in the air, making a whistling noise with its wings, and finally after four or five minutes of this drops to the ground near its admiring mate. At Mountain Lake this "sky dancing" takes place in April and May, but in the low country it is often earlier still.

Since the woodcock is so secretive, we do not have enough information as to its status in Virginia. It is certainly not nearly so common now as it once was in Tidewater or along the upper Potomac, yet it is found at all seasons and in all parts of the State. It is, however, nowhere abundant in our region. I once flushed three near the top of Mt. Rogers, our highest peak.

The bird nests around Richmond in late spring and early summer. A few still breed in northern Virginia. In fact, we have scattered nesting records from all parts of the State. A fledgling was taken from a dog in the Dismal Swamp in April, 1956.

I have never been fortunate enough to see a nest. It is said to be a simple hollow on the ground, lined with dead leaves. Three or four large mottled eggs are laid. When the young are too small to fly, the mother sometimes removes them from dangerous places by carrying them between her legs or clasped between the legs and the body.

The woodcock is hardly common enough now in Virginia to make it important to hunters, but when found it is a very satisfactory game bird. It lies close before flushing and requires a quick shot. And when it is brought to the table it provides one of the most delicious of all meats.

Edited by DOROTHY ALLEN

Wildlife Essay Contest Entries Climb

A record 427 schools having eligible students totalling 134,838 had entered the 15th Annual Wildlife Essay Contest sponsored by the Virginia Commission of Game and Inland Fisheries and the Virginia Division of the Izaak Walton League of America as of December 14, according to Dorothy E. Allen, Education Officer for the Virginia Game Commission. A total of $2.900 in prizes will he awarded to the 223 students who submit the best essays before this contest closes on January 31, 1962.

"Why Legal Hunting and Fishing Are Good Conservation Practices" is the theme of this year's contest. Schools not yet entered may sign up for the contest by sending an official entry card to the Game Commission in Richmond.

The top prize is a $700 scholarship to be awarded to the high school senior suhmitting the best essay. Other prizes will be distributed to entries from each of the grades 5 through 12 which are eligible for the contest.

The NRA Safety Program

There is no better time to learn gun safety than right now. The Commission of Game and Inland Fisheries has joined with the National Rifle Association in a cooperative hunter safety program. Take advantage of this opportunity hy writing a letter to J. N. Kerrick, Safety Training Officer, Education Division, Commission of Game and Inland Fisheries, Richmond, Virginia. for further information. The Commission will provide teaching manuals. official NRA instructor's credentials, and shoulder patches. After receiving this instruction you will be proud to wear the bright yellow shoulder insignia. the ofcial NRA "Safe Hunter Award."

Photo by Max Ailor from Richmond Times-Dispatch

Carlton Byers, Gregory Winston, Billy Byers, E. B. Matthews, Billy Peebles, Eddie Richardson, and Johnny Seay, winners of Louisa and Brunswick county wildlife food patch contests sponsored by Louisa County High School and Louisa, Red Oak, Central and South Brunswick Ruritan clubs, were treated to a free hunt at the Hidden Acres Shooting Preserve at Trevilians this past fall.

Tanning Hides at Home

Many useful articles can be made from buckskin and will bring back the memory of your successful hunting trip for years to come. If it is your first deer, you will probably want to keep part of the hide. Write to the Commission of Game and Inland Fisheries in Richmond for free reprint, "Tanning Hides and Small Fur Skins at Home."

Conservation Week Observed

Natural Resources Conservation Week in October was observed at Capron Elementary School with a special program in the school auditorium. Guest speakers were E. A. Davis. Secretary of the J. R. Horsley Soil Conservation District, and Ralph Rayloe, Union Bag-Camp Paper Corporation conservation forester, who told of the many uses of trees and how forests help in the total conservation program.

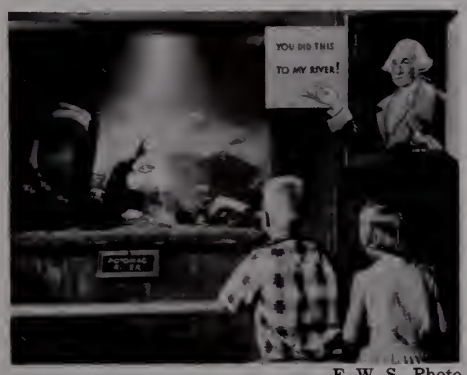
Miss Lizzie Story, who took the Summer Conservation Workshop Course sponsored by the Virginia Resource-Use Education Council at William and Mary in 1958 and has taken a great deal of interest in promoting conservation of our natural resources in her classroom teaching, organized this observance.

Study Aids

The Defenders of Wildlife are interested in teaching youngsters the value of our wild furhearing animals. They will send free pamphlets to school children and teachers to aid them in their wildlife studies. Each 8½-by-11-inch sheet includes the life history of the animal and pictures with descriptions. You may have these study aids by writing to:

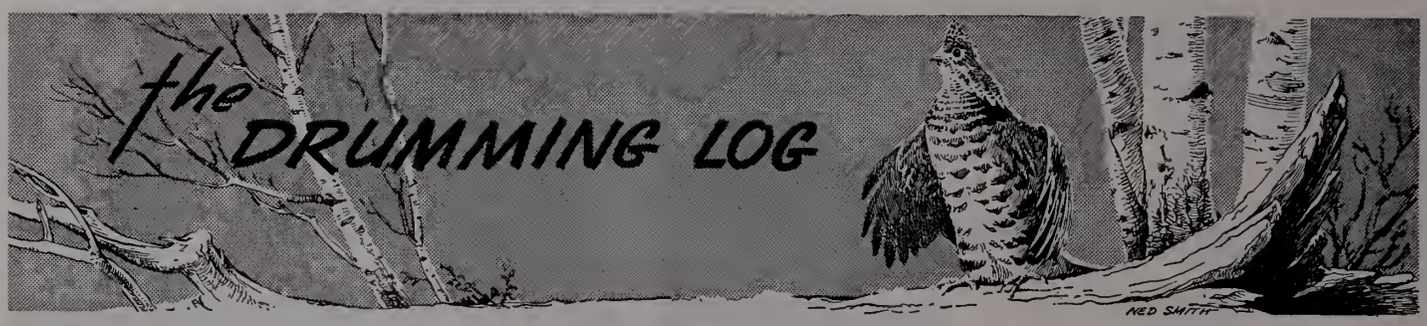
Junior Defenders of Wildlife
809 Dupont Circle Building
1346 Connecticut Avenue, N. W.
Washington 6, D. C.

A wildlife foods display arranged by Mrs. Brooks Silvette at the last Fall Tea and Flower Show of the Spotswood Trail Garden Club of Greene County included several copies or *Virginia Wildlife*.



F. W. S. Photo

A striking illustration of the pollution of "George Washington's river" is this exhibit in the U. S. National Aquarium at Washington, D. C. "You did this to my river!" says George Washington to visiting school children.



Edited by HARRY GILLAM

VWF Director Munford Dies

George Leland Munford, mayor of Wakefield the past 20 years and a former member of the House of Delegates, died November 24 at his home after an illness of six months.

Mr. Munford, who represented Greensville and Sussex counties in the General Assembly from 1954 to 1958, was a charter member and president for the past 30 years of the Wakefield Community Hunt Club and also was a director of the Virginia Wildlife Federation and a charter member of the Wakefield Sportsman's Club.

Enforcement Personnel Changes

Several personnel changes have taken place recently within the ranks of the Commission of Game and Inland Fisheries' warden force.

Elon D. Sheetz, State Game Warden in Shenandoah County, retired on November 1 after 31 years of service with the Commission. His replacement is Fred Hottle of Edinburg, former conservation officer in the Jefferson District.

When two sick elk were reported to the Virginia Cooperative Wildlife Research Unit, staff members went to the Peaks of Otter on the Blue Ridge Parkway to make an examination. This 1½ year old cow was found in the picnic area, was very tame and walking in a circle to the left. The veterinarian made an examination and the animal was tranquilized and taken to V.P.I. An autopsy was performed. When evidence of Listeria was not found, rabies became a strong possibility.

This 15¼-pound, 34-inch-long walleye was taken in the New River above Byllesby Dam in Carroll County by R. Payne Johnson of Wytheville. Perhaps the largest ever taken in Virginia, it was caught on 15-pound test line and a five-foot glass rod, with a large minnow as bait. Game Warden Charles Chappell reports that several large walleye were taken at Byllesby and Buck Dams during October and November.

Earl Cather, Frederick County warden, resigned on November 1 after working for the Commission since 1947. His territory will be patrolled by wardens from Clarke, Shenandoah, and Warren counties.

Darrell Ferrell, Stafford County game warden, is on military leave for an indefinite period. His territory will be patrolled by wardens in surrounding counties during his absence.

Former Wise County Game Warden Ralph Markham was transferred to duty in Highland County and Conservation Officer Jesse S. Mise, Jr. transferred from Lee County to fill the game warden vacancy in Wise County.

Garland C. "Jack" Fentress began work as Game Patrol Pilot for the Hampton Roads District on November 1.

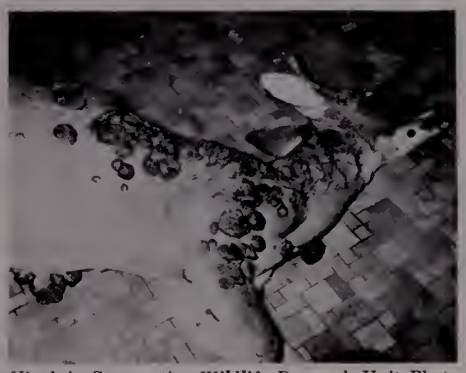
Commission Men Hold Offices In Regional Wildlife Groups

An overly-protective public attitude toward wildlife was pinpointed by Virginia Game Commission Director Chester F. Phelps as one of the main shackles holding back the application of good game management in America in his address which opened sessions of the 15th Annual Convention of the Southeastern Association of Game and Fish Commissioners in Atlanta, Georgia, October 22-25.

Director Phelps, past president of the Southeastern Section of the Wildlife Society, presided over the opening session of the Association's annual meeting. Virginia personnel who were elected to official posts at the regional meeting were R. S. Purks of Fredericksburg, supervisor of the George Washington law enforcement district, who is vice-chairman of the Southeastern Law Enforcement Section, M. Rupert Cutler, education division chief, who was selected as secretary of the newly-organized Southeastern Society for Conservation Information and Education, and Burd S. McGinnes, V.P.I. Cooperative Wildlife Research Unit leader, who was elected secretary-treasurer of the Wildlife Society's Southeastern section.

McGuire Morris, state game warden for Powhatan County, received a citation and a $50 cash award for being named the outstanding Virginia warden for 1961.

When William Napier of Front Royal shot a squirrel in nearby foothills close to the Shenandoah National Park and left the dead squirrel lying where it fell about 10 feet in front of him in hopes of getting another squirrel cutting nuts above, he wasn't expecting the hungry bobcat that suddenly appeared, grabbed the dead squirrel and dashed off in thick undergrowth. Napier took a bead on the cat and added one bobcat to his afternoon's bag.



Virginia Cooperative Wildlife Research Unit Photo

Commission Photo by Hill

Harrisonburg News-Record Photo

FROM THE RIDICULOUS TO THE SUBLIME—At far left is a 1½-year-old buck killed on Route 60 near Sprouses Corner on October 9, 1961. The deer was taken to V.P.I. and autopsied but nothing unusual was found internally. The large, numerous, warty tumors are not fatal although are unsightly. Such tumors are caused by a virus. Their spread is believed to be accomplished by blood-sucking insects. These "warts" do not spoil the meat. The deer in the center photo was a partial albino hit by a car in Goochland County last fall. It died later of internal injuries. At right, deer trophy first-place winners at the annual western Virginia contest on October 13 and 14 in Harrisonburg included: Jacob B. Shoulder, Staunton; George K. Marshall, Elkton; and G. E. Mullins, Roanoke. Kermit Dovel, right, presented the awards for the Izaak Walton League. Other winners were Walter J. Knight of Elkton and John Campbell of Waynesboro (bear category).

Education Division Adds Gillam And Newman To Staff

Harry L. Gillam, former information supervisor with the Tennessee Game and Fish Commission, joined the staff of the Virginia Commission of Game and Inland Fisheries on November 1 as education division information officer. Gillam is working out of the Commission's Richmond office, where he prepares news releases, radio announcements, and TV program material for use throughout the state. He has the responsibility of editing Virginia Wildlife magazine's "Drumming Log" and "Conservationgram" pages, supervising the circulation of that magazine, and contributing occasional articles for publication. He also assists in the preparation of law digests and other commission publications.

Gillam has bachelor's and master's degrees in wildlife management from Oregon State College. He worked with the Oregon Cooperative Wildlife Research Unit and the U. S. Fish and Wildlife Service prior to serving three years with the Tennessee Game and Fish Commission.

Stuart O. Newman, former state game warden in Mecklenburg County, transferred on November 16 to the Commission's education division as coordinator of field educational services. Newman ranked as top salesman of VIRGINIA WILDLIFE magazine subscriptions last year and has been very active in all phases of public relations since he began work with the commission in 1956.

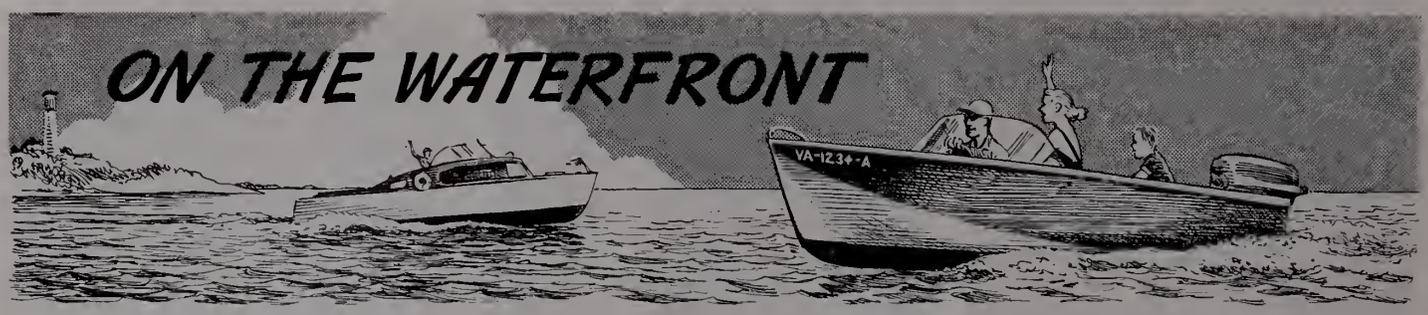
In his new capacity, Newman is acting as a liaison man and coordinator between the Richmond education office force and the commission field personnel. He will instruct and assist the field men in presenting programs, exhibits, and instruction courses in firearms safety and boating safety, work with wardens in obtaining subscriptions to VIRGINIA WILDLIFE magazine and in distributing other commission publications, and generally encourage the commission's field men to become more public relations-conscious.

Commission Photo by Kerrick

These members of the Fairfax Rod and Gun Club qualified as certified hunter safety instructors by taking a course given by Game Commission Safety Training Officer Jim Kerrick in August.

Commission Photo by Kesteloo

New to the Game Commission's education division are (from left) Information Officer Harry Gillam, Education Officer Dorothy Allen, and Field Education Coordinator Stuart Newman.



Edited by JIM KERRICK

Carbon Tet Out For Boat Fire Extinguishers

On Sept. 6, 1958, the U. S. Coast Guard withdrew approval for the use of vaporizing liquid type fire extinguishers such as those containing carbon tetrachloride or chlorobromomethane. This includes the Pyrene and other trade name extinguishers covered in Section 31 of NBFU #10, the standards for portable fire extinguishers L 680.070. However, the Coast Guard Regulations stated that any such extinguisher manufactured prior to 6 December 1958, may be continued in service as long as it is in good and serviceable condition until Jan. 1, 1962.

On Nov. 5, 1960, the Coast Guard specifications for extinguishers were revised. Sub part 162.028-3(k) states that every portable fire extinguisher using toxic extinguishing agents shall contain only agents which qualify for Underwriters' Laboratories, Inc., toxicity rating of Group 5 or Group 6, and which in normal fire extinguishing use do not generate decomposition products in concentrations hazardous to life. This rules out the use of carbon tetrachloride and chlorobromomethane and any other chlorinated chemicals.

These chemical agents are dangerous to use on a hot fire in a small enclosure or poorly ventilated area because they decompose when heated to form phosgene and hydrogen chloride gases, both of which are toxic on inhalation.

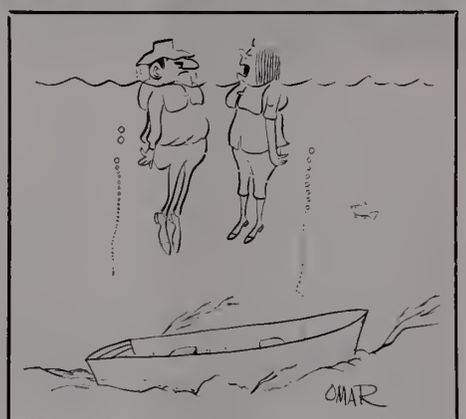
For basic information, see:

Federal Register Reprint Series No. 21-58; Federal Register, Vol. 23, No. 175, Sept. 6, 1958; Title 46 "Shipping"

Proceedings of the Merchant Marine Council, United States Coast Guard, Vol. 15, No. 10, October 1958; page 178; CG-129.

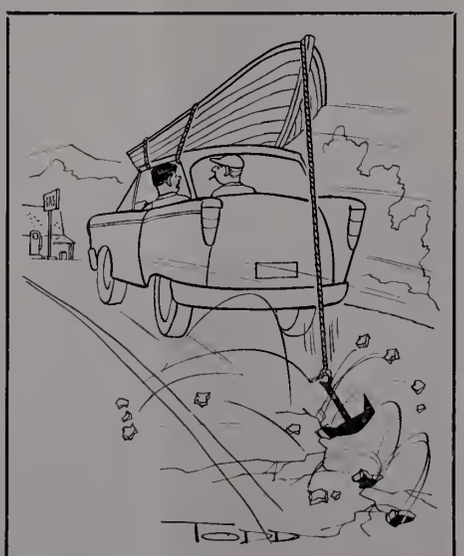
Disconnect Fuel Line at Gas Tank

Between outings in your outboard rig always disconnect the fuel line from the gasoline tank in order to seal the tank and retain vapors in the fuel. The Evinrude Boating Foundation reminds outboarders that fuel tanks have a valve at the tank which automatically seals the tank when the fuel line is removed.



"So much for the maiden voyage of 'Miss Homecraft I'!"

Temperatures in the gasoline tank in hot weather may reach 115 to 140 degrees. As some components of gasoline will boil off at those temperatures, as much as 15 per cent of the "high ends" or more volatile gases are lost from an unsealed tank, lowering the running qualities of the fuel. These more volatile gases are also the most easily combustible, and are therefore very important in starting, especially when the engine is cold.


"I'd better stop and see if a mechanic can find out what's the matter with the car."

Skin and SCUBA Diving Clubs Attention:

An effort is being made by a member of the Richmond Undersea Explorers Club to compile data on organized diving activities in Virginia waters. It is requested that the secretaries of such clubs send information on membership, qualifications for membership, and such diving activities as may be of interest to other clubs to: Ronald F. Marion, 4007 Cutshaw Avenue, Richmond, Va.

Practicing Water Safety

At the National Water Safety Congress in October 1961, Captain Clay Clifton stressed "Proficiency in Safety." Proficiency in safety on the water is not unlike proficiency in any other endeavor. The more one practices it the more proficient one becomes at it. Boating is perhaps the fastest growing form of recreation in America. Here are some suggestions and warnings. They are not new but are worth repeating:

1. Exercise ordinary common sense seamanship.
2. Avoid rough and turbulent water, and respect treacherous currents.
3. Proceed at a safe speed near congested areas and bathing beaches.
4. Observe areas having speed regulations. Signs will be seen mounted afloat on barrels, buoys, and rafts and may also be posted ashore.
5. Avoid overpowering and overloading. Invite those extra guests on another day.
6. Carry the recommended safety equipment as well as that prescribed by regulations and do not forget lifesaving equipment designed for children. Wear lifesaving equipment under adverse conditions.
7. Fuel only when absolutely necessary at night or when guests are aboard. Gasoline and oil vapors sink to the bottom of enclosed spaces.
8. Ventilate enclosed spaces until sure vapors are eliminated.
9. Have fire extinguishers and lifesaving equipment readily accessible at all times.
10. Skylarking and hotrodding motorboats will eventually cause trouble.

LETTERS

(Continued from page 3)

YOUR editorial in the October 1961 issue of VIRGINIA WILDLIFE on opening the small game season one to two weeks early is very interesting and important. I would like to go on record, as a small game hunter, as being a strong advocate of opening the small game season two to three weeks ahead of the deer season. I feel that the bulk of the true sportsmen fall into this category of being small game hunters, and from my observation in the past this group of true sportsmen are not interested in poker chips and drinking as seems to be the case with the so-called deer hunters. May I state that I feel very strongly about this situation and would like to make one suggestion which I think would improve hunting throughout the state of Virginia. It appears to me that we should have one hunting license at a cost of from six to 10 dollars and eliminate all these county, big game, and duck stamps. My reason for this: it has gotten so unless you have a double pocket full of either big game stamps, or damage stamps, or duck stamps, you never know whether you are hunting legally or illegally from one county to another. No true sportsman, if he loves hunting, should have any objection to paying six to 10 dollars for a hunting license if this would eliminate all these odd stamps. Also, I feel that this will remove a large percentage of these trigger-happy neophytes who are destroying the true sportsman's hunting, and also this is the group that are killing hunters during the hunting season. This letter expresses not only my feelings but also my hunting partner's, Dr. Crutchfield, and many other fine sportsmen that I talk with throughout the state of Virginia.

E. K. Adams, D.D.S.
Roanoke, Virginia

MY interest in an earlier opening date for the small game season in Virginia has just been boosted by the editorial in the October issue of VIRGINIA WILDLIFE.

The presently combined small and large game season is disadvantageous from several viewpoints. As pointed out by Mr. Cutler, and as recognized by the large majority of our sportsmen, we are wasting game with our late November opening. Moreover, the precious weeks of late October-early November are slipping by the hunters each year—wasted! Why cram all hunting into a 10-week period when, with a little juggling of seasons, our sportsmen could be given the advantage of a 12-week, or longer, season, and all this without increasing hunting pressure on either small game or deer and bear. Also, by including our greatest game bird, the turkey, in with the small game season more hunters would undoubtedly become indoctrinated in the art of stalking and calling these wily birds. Thus, a more "sporting" atmosphere would be created.

It is the goal of every state game commission to make possible a maximum number of hunting hours, or recreation hours, without seriously affecting the population of the game that is being hunted. I would suggest the following hunting seasons:

Small Game, incl. Turkey
Mtn. & Valley—last Mon. Oct.-Jan. 10
Piedmont—1st Mon. Nov.-Jan. 17
Coastal Plain—2nd Mon. Nov.-Jan. 24
*Deer, Bear**
Mtn. & Valley—6 days, starting next to last Mon. Nov.
Piedmont—last Mon. Nov.-Jan. 17
Coastal Plain—1st Mon. Dec.-Jan. 24
1st Mon. Dec.-Jan. 24
*except as adjusted by individual county for closing date

As can be seen from the above, all hunting would cease on the same date, the over-all hunting period would be extended by two weeks, the turkey hunter would be allowed to execute his calling skill before deer hunters scattered the flocks, the sportsmen of the mountain and valley area would not be so severely penalized by the "snow law," the peanut-soybean farmers would be prepared for the opening of deer season, deer-breeding interference would be greatly reduced, and everyone would be much happier.

Kenneth A. Knox
Charlottesville, Virginia

FOR a number of years I've been an ardent reader and subscriber to VIRGINIA WILDLIFE magazine. Let me say thanks for its wonderful information.

I notice in your October issue the editorial, "Early Small Game Season, Anyone?" Sir, I live in Buckingham County six miles east of U. S. 60 on the James River. We have a variety of game, small and large, counting deer and good turkey range. You speak of the dyed-in-the-wool turkey hunter. He, too, should consider others; he, too, should know he and his kind would disturb the ardent deer hunter by tramping through the woods with their highly trained dogs.

Let me say this: I own 300 acres of land bounded on the west by the James River. Deer feed and bed down on my property, both in woods and the river bottom land. Remember, too, rabbit dogs will run deer and disturb them; then there is always a certain amount of poaching, no matter how much law enforcement.

I say that in as large an area of land as the state of Virginia it is impossible for the game commission to make a blanket law to cover the state. So, in order to be fair to the sportsmen in the Blue Ridge Mountain section, to those in Tidewater, and to us who live in the piedmont section—let's cut the state up in zones. This would be fair to each section.

The weather has never been so rough in my section as to destroy game. Please, in the Buckingham-Appomattox area, let's keep the laws like they are. Sir, in my neighborhood there are at least 20 dogs that roam the woods and fields destroying more game per dog than any five sportsmen would kill per season. I say, let's bring before the state legislature a bill asking to raise the license on all dogs to a flat $10.00 per year. Use this extra money to provide feed for wildlife and to restock. This would surely be the answer to overpopulated dog areas. Any man that is a true sportsman would not mind paying $10.00 for a dog he values as priceless as most sportsmen do.

John R. Taylor
Gladstone, Virginia

I AM in favor of having the small game season open before the deer season comes in. As a matter of fact, there is no need for a turkey hunter to go hunting turkeys after the deer season comes in because the turkeys are so scattered that it takes the rest of the season for them to get back together again.

Willard Atkins
Orange, Virginia

On Increase In Damage Stamp Fee

I WOULD have no desire to excoriate the officialdom of Craig County on the proposed increase in the damage stamp from one dollar to four dollars if it were to be used to recompense the farmer for damage incurred, but I look with disgust and contempt on them and their reason for the increase—to gain additional revenue. It is rather obvious what has happened in Craig, and will happen elsewhere if not suppressed in Craig, is that a sizable surplus has been realized year after year in this fund due to the small number of claims paid to the landowners of the county, and some unwise bureaucrat has envisaged a bold scheme that will solve all the economic problems of the county by this imposition on the hunter.

This idea loses sight of the purpose and reason for a damage stamp and of course fails to consider any ability to pay, but on the contrary is a discriminatory tax against many who cannot afford to pay. If Craig is successful in this venture it is not difficult to visualize a time in the near future when every county will have similar taxes, and hunting will be restricted to the very wealthy few who can afford to own hunting preserves.

F. D. Holdren
Roanoke, Virginia

Vote of Confidence

ENCLOSED find check for $10 for a 10 year renewal of the subscription in my name to my residence. Thank you.

Carroll H. Lippard, M.D.
Lynchburg, Virginia

That Old/New Chestnut

THAT interesting article in your October issue gave me a touch of nostalgia; I so often have regretted so very much that my kiddies, and theirs, never could enjoy those delightful autumn nutting outings.

And it made me recall something I read a long time ago in a *Reader's Digest*, as a quote from *Ladies Home Journal*, viz.—That the Commonwealth of Virginia encourages reforestation by giving a packet of seeds with every hunting or fishing license. Personally, I never saw any, but it had the sound of a sound idea.

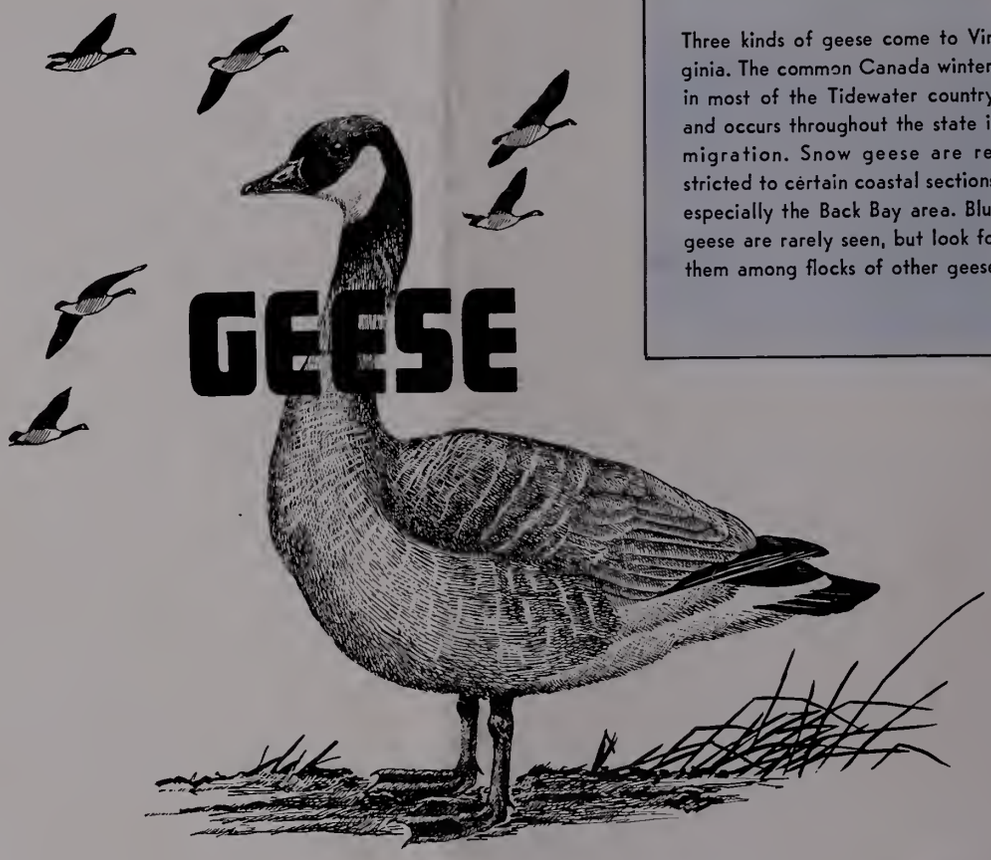
Why wouldn't something of this nature be worth trying for that hybrid Chinese chestnut, if now deemed sufficiently tried and proven? I know us Old Timers who "remember when" would enthuse.

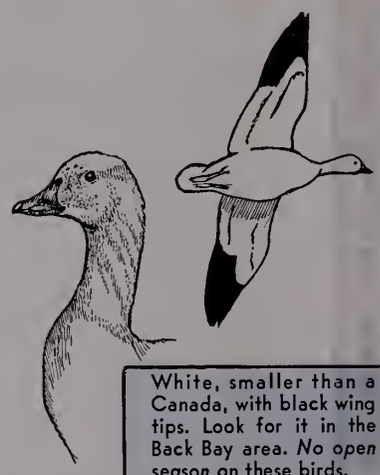
Irving B. Newcomb
Arlington, Virginia

The Virginia Commission of Game and Inland Fisheries has conducted extensive experiments on its own and in cooperation with the U. S. Forest Service with various chestnut hybrids and as yet has not settled on any one that appears to be outstanding. When this time arrives, I am sure your suggestion will be given serious consideration.—Ed.

GEESE

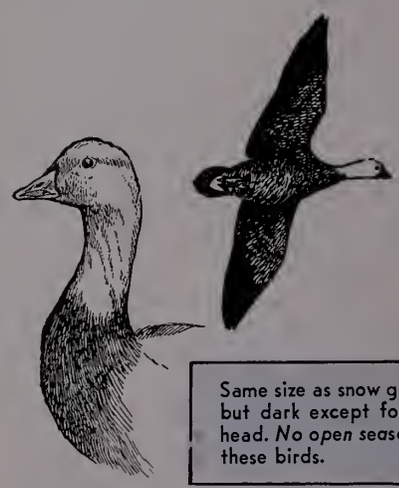
Three kinds of geese come to Virginia. The common Canada winters in most of the Tidewater country, and occurs throughout the state in migration. Snow geese are restricted to certain coastal sections, especially the Back Bay area. Blue geese are rarely seen, but look for them among flocks of other geese.





White, smaller than a Canada, with black wing tips. Look for it in the Back Bay area. *No open season* on these birds.

SNOW GOOSE



Same size as snow goose, but dark except for the head. *No open season* on these birds.

BLUE GOOSE

J W TAYLOR